CS 320: Syllabus

CS 320 - Software Engineering and Design

Spring 2018

Class times:

- Section 101: M/W/F 9:00 - 9:50 AM in KEC 119
- Section 102: M/W/F 11:00 - 11:50 AM in KEC 119
- Section 103: M/W/F 1:00 - 1:50 PM in KEC 119

Instructor:

- Donald Hake, djhake2@ycp.edu, KEC 137, 815-6587
  Office Hours: M/W/F 10:00 - 11:00, Tue 10:30 - 12:30, and by appointment

Course Description

This course describes the software development process in detail, including the software life cycle and models of software development; requirements analysis and software design techniques, such as Textual Analysis, UML, and Jackson Design Methodology; techniques for software quality assurance, including design reviews, automated testing, metrics, and an introduction to program verification; and software project planning, organization, and management. Students will be expected to participate in a semester-long team-programming project.

Prerequisites

CS 201 with a grade of 2.0 or higher

Textbooks

Martin Fowler, UML Distilled, 3rd ed.

Course Structure and Expectations

The overall goals of this course are to explore the issues surrounding “real world” software development, and to learn how to work effectively with the people involved in a software project.

The course will heavily emphasize discussion and participation. As such, I expect you to attend class and participate fully in the in-class activities. Repeated absences or failure to participate will negatively affect your grade.

Throughout the semester, you will be working in a team to design and implement a substantial software system. This project will allow you to apply the concepts you are learning about in the readings and the in-class activities.

Learning Outcomes

By the end of the course, you will be able to:

- Collect software requirements and develop use cases
- Develop analysis and design models
- Critique analysis and design models to suggest possible improvements
- Use analysis/design models to guide implementation
- Assess and ensure software quality using unit tests, system tests, metrics, and static analysis
- Understand the software lifecycle
- Understand the issues involved in planning and estimation for a software project

Policies

Grades

Grades are assigned on a 100-point scale:

Numeric Range	Letter Grade
90-100	A (4.0)
85-90	B+ (3.5)
80-85	B (3.0)
75-80	C+ (2.5)
70-75	C (2.0)
60-70	D (1.0)

Numeric Range	Letter Grade
0-60	F (0.0)

Your overall grade for the course will be determined as follows:

- Individual project, labs, and assignments: 25% **(†)**
- Contributions to team project: 50% **(*)**
- Midterm exam: 20%
- Attendance and participation: 5%

(†) You must make a good faith effort to complete all of the labs and assignments in order to pass the course. Failure to complete all labs and assignments is grounds for receiving a reduced or failing grade for the course.

(*) You must make a substantial *technical* contribution to your team software project. Although the non-technical contributions you make to your project, such as planning, communication, and organization, are important, you must also make a substantial contribution to the design and implementation of the software. I reserve the right to assign a failing grade for the course to any student who does not do this.

Course website

Please check the course web page, http://ycpcs.github.io/cs320-spring2018/, regularly for important announcements.

Attendance

Class time will be devoted to activities, project work, demos, and status reports. As such, it is essential that you attend class.

If you have more than two unexcused absences, then your course grade could be reduced by as much as the number of points equal to

$$2^{(absences - 2)}$$

For example, if you have 5 unexcused absences, then your course grade could be reduced by as much as $2^{(5-2)} = 8$ points.

At a minimum, you attendance grade will be reduced by 1 percentage point for every unexcused absence over 2, and it could even be negative if you have more than 5 un-unexcused absences.

Reading Assignments

Reading assignments are posted on the Schedule page.

Because we will be using class time primarily for discussion and activities, rather than lecture, it is important that you do the reading.

Posting and submission of assignments and labs

Assignments and labs will be posted as zip files on the course web page, http://ycpcs.github.io/cs320-spring2018/.

Written assignments will be created and submitted via shared Google Docs.

Programming assignments and labs will be submitted using the server https://cs.ycp.edu/marmoset/. You will receive an email containing the username and password you should use for this server.

Academic Integrity

The college catalog states the following:

> Academic dishonesty will not be tolerated at York College. Academic dishonesty refers to actions such as, but not limited to, cheating, plagiarism, fabrication of research, falsification of academic documents, etc., and includes all situations where students make use of the work of others and claim such work as their own.

Please refer to the college catalog for an explanation of the official college policies relating to academic integrity.

The following policy pertains to homework and graded (individual) programming assignments in this course:

> All homework assignments and graded (individual) programming assignments are to be completed individually. I encourage you to discuss high level concepts and strategies with other students, but any work you submit **must be yours alone**.
>
> Because the individual assignments are essential for working towards and demonstrating the achievement of the course outcomes, you must solve them on your own. You may discuss the problem and high-level (pseudo-code) approaches to solving the problem with other students. You may *not*, under any circumstances, discuss or share concrete implementation techniques or code.

Examples of forbidden types of collaboration include, but are not limited to: looking at another student's code, allowing another student to see your code, viewing and/or using code from an external source such as a web page, discussing the use of specific API functions to solve a problem, giving or receiving help debugging specific code.

Direct copying of code or other work from other students, web sites, or other sources **is absolutely forbidden under any circumstances**.

Any sources (books, websites, articles, fellow students, etc.) that you consult in completing an assignment **must be properly acknowledged**. In general, I strongly discourage you from using any resource not explicitly listed in the course syllabus or on the course web page. When you work on a programming assignment, it must be **your** program, not your adaptation of someone else's program.

You are allowed to (and expected to) work with the members of your team on team project(s). I will generally give you explicit permission to use the code supplied through examples, labs, and solutions for your team projects. In fact, I will encourage you to use that code as a basis for starting your project, if you happen to be working in Java and Eclipse.

You may work with other students on the labs. However, I do expect you to complete and submit them, and they count towards your participation grade.

All quizzes and exams must be completed individually.

Any violation of the course's academic integrity policy will be referred to the Dean of Academic Affairs, and could have consequences ranging from a 0 on an assignment to dismissal from the college.

Late Assignments

Late assignments will be marked down 10% per day late. **No credit will be given for assignments that are more than two (2) days late.**

Exams

No make-up exams will be given without approval of the instructor prior to class unless proof of extreme emergency or illness is provided. All exams will be open book.

Attendance and Participation

We expect you to attend class and participate regularly in class activities. If you miss a class, please notify me in advance. You are responsible for all material covered in class, regardless of whether or not you were present. If you attend and participate in class regularly, you can expect to receive full credit for attendance and participation. Frequent absence and/or lack of participation will reduce the credit you receive for attendance and participation. You are responsible for keeping up with the reading assignments as described in the schedule below.

Disability accomodation

If you had an IEP or 504 plan in high school or if you have a disability or health condition that impacts you in the classroom, please contact Linda Miller, Director of Disability Support Services, at 815-1785 or lmille18@ycp.edu to discuss obtaining the accommodations for which you may be eligible. If you already have an accommodation memo and wish to access your accommodations in this class, please see me confidentially to discuss.

Use of Personal Technology in the Classroom

While York College recognizes students' need for educational and emergency-related technological devices such as laptops, PDA's, cellular phones, etc., using them unethically or recreationally during class time is never appropriate. The college recognizes and supports faculty members' authority to regulate in their classrooms student use of all electronic devices.

Communication Standards

York College recognizes the importance of effective communication in all disciplines and careers. Therefore, students are expected to competently analyze, synthesize, organize, and articulate course material in papers, examinations and presentations. In addition, students should know and use communication skills current to their field of study, recognize the need for revision as part of their writing process, and employ standard conventions of English usage in both writing and speaking. Students may be asked to further revise assignments that do not demonstrate effective use of these communication skills.